Putting Research to Work

RD&T E-Newsletter, September 2004

Technical information for state DOT highway professionals

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WisDOT RD&T Home

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Research World

TRB's International-Focus Newsletter Back in Business

TRB's TranScan newsletter has resumed publication after a two-year hiatus. The quarterly publication, part of an NCHRP international information sharing project (WisDOT's Ken Leonard sits on the project panel), will report on the results of scan tours, World Road Association committee actions, global transportation events and more. The summer issue includes articles on deploying highway innovations and on traffic safety information systems. See http://trb.org/publications/nchrp/transcan_7.pdf. Courtesy of the TRB E-Newsletter.

Bridge Designed to Withstand Greece's Harshest Storms, and More

Boasting the world's largest cable-stayed deck, Greece's Rion-Antirion Bridge opened to traffic last month. Engineers had to design a bridge that could withstand winds of up to 250 kilometers per hour, an 18-knot collision with a 180,000-ton tanker, and frequent earthquakes. During construction, pier bases were weighted by seawater as temporary ballast to ensure early ground consolidation. See http://www.fabermaunsell.com/news/news_details.asp?newsID=434. Courtesy of Bentley Systems' BE Newsletter.

Aussie Guidance on Flexible Overlay Design

Austroads has published a free technical report on two methods used for thickness design of flexible overlays on flexible pavements. The methods will be included in a design guide on pavement rehabilitation treatments due out later this year. Download the report at http://203.42.45.20/mall/austroads_v2/pdfs/594_AP-T34-04.pdf, and read more at http://www.austroads.com.au/austroads_newsletter.html.

Ontario Gives Green Light to Red Light Cameras

On the heels of a successful pilot project, the government of Ontario has given municipalities the ability to use red light camera technology on a permanent basis for road safety purposes. See http://ogov.newswire.ca/ontario/GPOE/2004/08/10/c0088.html?lmatch=&lang=_e.html.

Targeting VMS Content to Keep Drivers Safe

Britain's 2,000 variable message signs keep drivers informed with up-to-the-minute information about driving conditions and the road ahead. The Highways Agency is also using VMS to remind drivers about key safety issues, with messages carefully targeted to be relevant to drivers at certain times of the year or on certain routes. Link to the press release: http://www.gnn.gov.uk/Content/Detail.asp?ReleaseID=127600&NewsAreaID=2.

To receive notice of **Putting Research to Work** each month, e-mail wisdotresearch@dot.state.wi.us.
Previous issues are available at http://www.dot.wisconsin.gov/library/publications/format/newsletters/rdt.htm.

Other e-newsletters for transportation professionals:
TRB E-Newsletter from the Transportation Research Board: http://gulliver.trb.org/news/.
The AASHTO Journal from the American Association of State Highway and Transportation Officials: http://www.transportation.org/publications/journal.nsf.
CTS Research E-News from the University of Minnesota: http://www.cts.umn.edu/publications/enews/.
Texas Transportation Researcher from TAMU's Texas Transportation Institute: http://tti.tamu.edu/researcher/.
Austroads Newsletter from Austroads: http://www.austroads.com.au/newsletter.html.
Transportation Communications Newsletter: http://groups.yahoo.com/group/transport-communications/.

Designing for the Future

Residents Add Value to WisDOT Highway Planning

WisDOT District 4's public involvement efforts on the US 51/WIS 29 expansion, now under construction, included a Value Planning Team. The 40-member group, which tapped local government officials, business owners and area residents, worked to develop and evaluate alternatives for the WIS 29 west interchange. In four day-long workshops, the team reviewed issues such as travel speed, access improvement, and bicycle and pedestrian accommodations. See http://www.dot.wisconsin.gov/projects/d4/us51wis29/valueteam.htm.

Kansas DOT Shares Its Knowledge on Roundabouts

Kansas DOT recently published the *Kansas Roundabout Guide,* a supplement to FHWA's guidance on roundabouts. A detailed chapter on geometric design provides direction on multilane roundabouts, curb and pavement design, and drainage and grading. The guide also offers guidance on public involvement, operations and safety. View the document at http://www.ksdot.org/burtrafficeng/Roundabouts/Roundabout_Guide/RoundaboutGuide.htm.

GIS System Integrates Roadway Information in Vermont

An automated GIS-based system is helping the Vermont Agency of Transportation keep its route logs and infrastructure information—formerly maintained manually, on paper—up-to-date. VTrans staff developed two versions of the system: a Web-based application for nontechnical staff and a desktop version for "power" users. Both versions integrate disparate types of data for each roadway segment, eliminating data hunting and field visits. Read more in ESRI's *ArcUser* magazine at http://www.esri.com/news/arcuser/0704/vtrans.html.

Highway's Mitigation Plan Sets Records in Missouri

Missouri DOT's completion of an 8-mile, 10-lane St. Louis highway earlier this year was the culmination of 30 years of work. The mitigation plan for the project, which faced major environmental hurdles over the years, is unmatched in the state and included doubling the size of a nearby park, constructing an 8-mile bike path and dredging a lake. See http://www.transportation.org/aashto/success.nsf/allpages/2004-10Missouri, and read more about the project at http://www.modot.state.mo.us/local/d6/hottopics/Projects/J6U0803.html.

Reducing Bridge Scour with Barbs

Permeable "barbs," which deflect water away from bridge piers and abutments, can minimize damaging streambank erosion. A Washington State DOT study used hydraulic modeling to predict the effects of barbs and make recommendations for their incorporation into bridge designs. The research is highlighted on page 16 of the latest issue of *WST2,* WSDOT's technology transfer publication, at http://www.wsdot.wa.gov/TA/T2Center/T2Bulletin-archives/2004Summer.pdf.

IDOT Publishes CSS Guidelines

Illinois DOT's Context Sensitive Solutions guidelines are now available on its Web site. The document includes a detailed explanation of IDOT's Stakeholder Involvement Process, as well as guidance on involving other disciplines (such as community outreach professionals, landscape engineers and architects, and historical preservation specialists) in the design process. Download the guidelines at IDOT's CSS Web site at http://dot.state.il.us/css/home.html.

Georgia, Other DOTs' Environmental Initiatives Applauded

Georgia DOT's partnerships with FHWA and the U.S. Fish & Wildlife Service have led to innovative ecosystem preservation efforts, including the Flint River Ravines Tract, a stream mitigation bank home to uncommon plants and endangered animal species. The 1,300-acre site was in danger of being subdivided into a riverfront residential development when GDOT purchased it. The project is one of seven added last month to FHWA's list of Exemplary Ecosystem Initiatives. See http://www.fhwa.dot.gov/environment/ecosystems/index.htm.

Construction and Materials Innovations

Mobile Asphalt, Concrete Labs Rolling Along

Two mobile pavement testing labs are bridging the gap between the laboratory and the field, bringing sophisticated testing equipment to sites across the country. FHWA's mobile asphalt lab was in Waukesha, Wis., in June 2003, and drove off with pavement samples from Madison earlier this year. See http://www.fhwa.dot.gov/pavement/asmixlab.htm. Meanwhile, Iowa State University boasts a new mobile concrete lab; see http://www.ctre.iastate.edu/pubs/en_route/index.htm.

PCA Spreads the Word on Roller-Compacted Concrete

The Portland Cement Association just posted an e-briefing on roller-compacted concrete. Used for heavy industrial lots or for city streets (at times with asphalt overlays), RCC employs asphalt paving equipment to lay a drier concrete mix than is conventionally poured. The briefing spotlights its use in Columbus, Ohio; cites research on frost-damage resistance; and announces upcoming training. See http://www.cement.org/pavements/ec/pv_ec_04aug.htm. For RCC facts and links, see http://www.cement.org/pavements/pv_rcc.asp, and download RCC guide specs at http://www.cement.org/bookstore/profile.asp?itemid=IS009.

Whitetopping Stands Up to Truck Traffic in Michigan

Concrete whitetopping helped a Michigan county road commission solve a severe rutting problem on asphalt pavement near Interstate 75. A local road frequented by large trucks got a 7-inch concrete inlay, which solved the rutting problem and has shown minimal wear after its first winter in service. Read more on page 6 of the latest issue of Concrete Pavement Progress newsletter at http://www.pavement.com/CPP/2004/CPP-080604.pdf.

NCHRP Surveys State Product Evaluation Programs

The recently posted NCHRP Synthesis 328 on State Product Evaluation Programs documents states' approaches to moving innovative, cost-effective products into their operations. Ninety-one percent of the U.S. and Canadian agencies responding to the survey had formal programs; only 47%, including WisDOT, assign full-time staff. The study concludes that implementation and information sharing challenges remain for state DOTs and national evaluation programs. See http://www.trb.org/publications/nchrp/nchrp_syn_328.pdf.

50-Year Asphalt Pavements in Colorado

The August issue of *Colorado Construction* magazine highlights asphalt pavement. One piece notes that in Colorado, asphalt pavements have lasted 40 to 50 years. Another cites research showing its advantage in noise reduction over concrete. A third lists current asphalt pavement projects to watch in Colorado, including a 125,000-ton parkway project due to finish in November. Read more about long-life asphalt pavements at http://colorado.construction.com/features/archive/0408_CAPA.asp.

New Site Offers Answers on Asphalt

Roads and Bridges magazine hosts a site devoted to asphalt. Links lead to products and suppliers, frequently asked questions, and expert contacts. A search engine offers a quick survey of past issues for relevant items. The site can give a quick sense of most things asphaltic. See http://www.roadsbridges.com/rb/Index.cfm?powergrid=rfah=|cfap=&CFID=80155&CFTOKEN=20155737&fuseaction=showZoneMenu&zoneID=17.

LTPP DataPave Online Easy and Eye-Opening

A section of Class 6 pavement in Pierce County, Wis., was built in 1977 with a surface concrete layer of 7.1 inches, has a freezing index of 894.85 C-days, and its average IRI climbed from about 1.7 in 1990 to 2.15 in 1999. You can dig up such detail and more on roads from Alaska to Puerto Rico in the Long Term Pavement Performance database; simply register with your e-mail address at http://www.datapave.com/index.asp.

Operating/Optimizing the System

WisDOT Grants Help Enhance Visibility of Signs, Road Markings

Sixty-seven state grants to Wisconsin municipalities will assist in enhancing the visibility of traffic signs and roadway markings. Part of a program to assist older drivers and pedestrians, the grants will help fund projects that improve pavement markings such as centerlines, edge lines, crosswalks or lane use arrows, or increase the brightness or size of roadway signage. See http://www.dot.wisconsin.gov/news/news/2004general/opa-trafficsignawards174.htm.

Maintenance QA Peer Exchange Bound for Madison

A Maintenance Quality Assurance Peer Exchange will bring roughly 75 state transportation professionals to Madison Oct. 11 to 13. Wisconsin DOT's Alison Lebwohl, who is chairing the conference committee, says the exchange will help agencies nationwide better understand how to measure transportation maintenance performance. "If you don't measure it, you don't manage it," Lebwohl says. Learn more about the upcoming conference at http://www.mrutc.org/outreach/mQA/.

Winter Maintenance Support System Presentations Online

WisDOT is among 35 state transportation agencies involved in an FHWA initiative to develop a prototype tool to help winter road maintenance managers make decisions. Several national laboratories, led by the National Center for Atmospheric Research, have developed a program to integrate state-of-the-art weather forecasting tools with algorithms that recommend courses of action for winter maintenance operations. Presentations from NCAR's final stakeholders' meeting are online at http://www.rap.ucar.edu/projects/rdwx_mdss/Stakeholder_docs.html.

New AASHTO Equipment Reference Book

AASHTO recently published the 11th edition of its Equipment Reference Book, aimed at helping DOTs exchange information on maintenance equipment and practices. Included are equipment contacts for transportation agencies throughout the United States and Canada, along with specifications, new purchasing methods and innovative ideas. See http://maintenance.transportation.org/Assets/Download/AASHTOEquipmentReferenceBook2004.pdf.

Caltrans' Work Zone Safety Device Makes Tracks

California DOT's work zone protection device hit the road this summer for a 4,000-mile demonstration tour. The Balsi Beam, created by Caltrans with the support of FHWA, is a mobile, extendable physical barrier that protects a work zone from passing traffic. Earlier this summer, Caltrans officials road-tripped with the Balsi Beam to AASHTO's Maintenance Conference in Bismarck, N.D. Read more about the innovative safety device in *Focus* at http://www.tfhrc.gov/focus/july04/04.htm and in *Research & Technology Transporter* at http://www.tfhrc.gov/trnsptr/aug04/index.htm#saf.

NCDOT Moves Traffic Out of the Fast Lane

North Carolina DOT engineers are trying a more direct approach to keeping slow traffic out of the left lane. Since the traditional "Slower Traffic Keep Right" signs seem ineffective, NCDOT is painting "Pass Lane Only" on the pavement to encourage motorists to keep right. NCDOT engineers will study how drivers react to the markings. Read the news story from WRAL-TV (Raleigh, N.C.) at http://www.wral.com/traffic/3659665/detail.html. Courtesy of Transportation Communications Newsletter.

Keeping Bambi Off the Interstate

Montana DOT is planning to install roughly 20 miles of 8-foot woven wire fencing along Interstate 94 in hopes of reducing vehicle-wildlife collisions. The experimental project will attempt to direct wildlife to cross the roadway through large culverts under bridges. See http://www.mdt.state.mt.us/dir/scripts/newsdata.pl?newname=20040820-124255.TOP.

Safe Travel/Smart Travel

Test-Driving AASHTO's Safety Plan

Wisconsin is one of the states AASHTO has enlisted to demonstrate how the application of specific strategies in the association's Strategic Highway Safety Plan can reduce deaths and injuries. In one role, WisDOT is testing new tools developed to help states improve safety at unsignalized intersections. WisDOT is also pilot-testing the Integrated Safety Management Process, a critical component for implementing the plan. Read more in the project newsletter: http://safety.transportation.org/guides/LIFELINES-March2004.pdf.

Successful Start for Wisconsin's GDL

An evaluation of Wisconsin's Graduated Driver License law indicates the law is working to prevent traffic deaths and injuries among young people. Key findings: 18% fewer 16-year-old Wisconsin licensed drivers were involved in fatal crashes in the law's first three years than in the three years prior to GDL; 20% fewer were involved in injury crashes. Read the press release at http://www.dot.wisconsin.gov/news/news/2004general/opa-gdlrelease173.htm.

German Speed Enforcement System Coming to North America

Nestor Traffic Systems (Providence, R.I.) has obtained exclusive rights from German-based Vitronic to market and sell the "PoliScan speed" digital speed detection/recording system in the United States, Canada and Mexico. The system uses a high-resolution digital camera to document speeding offenses, providing an overview picture, a license plate picture, and a driver image where required. Read the press release at http://www.nestor.com/NewsCorporateMainFrame.htm#57.

WSDOT Chooses Cable Barriers for Safety

Washington State DOT will install cable barriers instead of concrete ones along the median of some dangerous sections of Interstate 5. While both types help prevent vehicle crossover, the "give" in cables also helps prevent vehicles from ricocheting and creating havoc in their own direction of travel. From *The Olympian*: http://www.theolympian.com/home/news/20040821/topstories/126539.shtml.

Self-Assessment Aims to Improve Traffic Signal Operations

Developed by the National Transportation Operations Coalition, the Traffic Signal Operation Self Assessment is a downloadable tool to help agencies identify opportunities to improve their traffic signal operations policies and practices. Agencies can also submit the results of their assessments for anonymous use in a national report card on traffic signal operations. For details, visit the TSOSA Web site at http://www.ite.org/selfassessment/.

Smarter Allocation of Traffic Safety Resources

Ohio DOT is launching research that will develop a process to ensure that intersection crashes are analyzed based on intersection geometrics, traffic control and environmental factors, with an ultimate goal of improving targeting of safety resources. Read more at TRB's Research in Progress site: http://rip.trb.org/browse/dproject.asp?n=9826.

Cell Phones for Travel Time Estimation

Florida DOT's research team is working to develop and implement travel time estimation using cell phone technology. Using cell phones as dynamic travel probes could help FDOT balance traffic flow patterns and help the public optimize travel times. From TRB's Research in Progress site: http://rip.trb.org/browse/dproject.asp?n=9746.